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TIPS AND TECHNIQUES

The Umbilical Locator: Bringing Simplicity to Surgery

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Introduction: The purpose of this article is to introduce the Umbilical Locator and demonstrate how it simplifies umbilical transposition in abdominal surgeries in both the cosmetic and reconstructive fields.

Materials and Methods: The Umbilical Locator is a new device that was designed and patented by one of the authors (F.F.) to help surgeons who are performing umbilical translocation during abdominal surgeries. The Umbilical Locator is safe, disposable, sterilizable, made of a nonlatex plastic, and can be used with any surgical method preferred by the surgeon. It was designed specifically for use in abdominoplasties. It was developed, manufactured, and marketed for sale by Innovative Med Inc, Irvine, California.

Results: To date, the Umbilical Locator has been used exclusively by one of the authors (F.F.), with excellent results. He has used this innovative device in 20 recent abdominoplasties, with no resultant umbilical slough or ischemia. Furthermore, there have been no complications noted with positioning, anchoring, or removal of the device.

Discussion: In abdominoplasty, an aesthetic and natural appearance of the umbilicus is a key factor to the end result. The Umbilical Locator can be used with any surgical method to create the umbilicus. The purpose of the product is only to help locate the position of the umbilicus on the skin. The surgeon is allowed to use the incision or surgical method of his or her choice on top of the umbilicus after the skin has been redraped prior to excision to precisely locate the umbilicus.

Conclusions: These preliminary data provide promising evidence for the continued and future use of the Umbilical Locator as a more reliable and accurate method of umbilical localization in abdominoplasty than prior techniques, such as the use of a spinal needle to pinpoint the location of the umbilicus. The Umbilical Locator has the potential to decrease the incidence of deformities, wound tension, and

resulting ischemia, and to reduce umbilical hypertrophic scarring. What has been to date a technically imprecise, unsophisticated phase of an abdominoplasty has now been simplified and refined using the Umbilical Locator.

Introduction

The art of cosmetic surgery is continuously evolving as practitioners continue to create more efficient, technically sound procedures that not only minimize complications but also maximize aesthetically pleasing outcomes. According to the ASPS, abdominoplasty is the sixth most commonly performed aesthetic procedure. It has evolved over time, beginning with the work of Dr Kelly in 1899. Dr Kelly was one of the first surgeons to attempt the removal of excess abdominal skin and fat for aesthetic reasons.

Reimplantation of the umbilicus remains a critical aesthetic component in abdominoplasty and other reconstructive procedures such as the TRAM flap. Location and placement of the umbilical incision is a challenging and aesthetically significant portion of the surgery. However, in comparison to the previous devices, the Umbilical Locator brings more simplicity to abdominal surgery in both cosmetic and reconstructive fields.

Dr. Forouzanpour previously used several other methods for relocating the umbilicus during abdominoplasties, including using a needle and using calipers to measure and mark the location of the umbilicus during abdominoplasty procedures so that it could be accurately relocated. He also observed unfortunate postsurgical results where the umbilicus was off center, tilted, or stretched. These results, in patients that were not his own, appeared to be due to improper localization of the umbilicus and inspired him to develop the Umbilical Locator and, in so doing, find a simpler, easier way to locate the umbilicus.

The purpose of this article is to acknowledge the technical difficulty of umbilicoplasty, to introduce the

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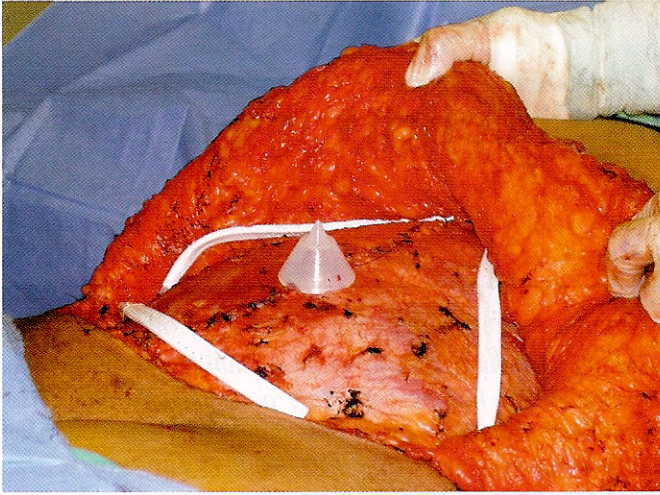


Figure 1. The Umbilical Locator is placed under the skin flap after it has been completely mobilized.

Umbilical Locator, and demonstrate how it simplifies umbilical transposition in abdominal surgeries.

Material and Methods

The Umbilical Locator is a device that allows easier, more precise localization of the umbilicus after mobilization of the skin flap. The Umbilical Locator is new, innovative, and safe to use while performing umbilical translocation. It is a plastic cone with side ports used for anchoring sutures. It is offered in a disposable and sterilizable form and is made of nonlatex material. The Locator was designed specifically for use in abdomi-

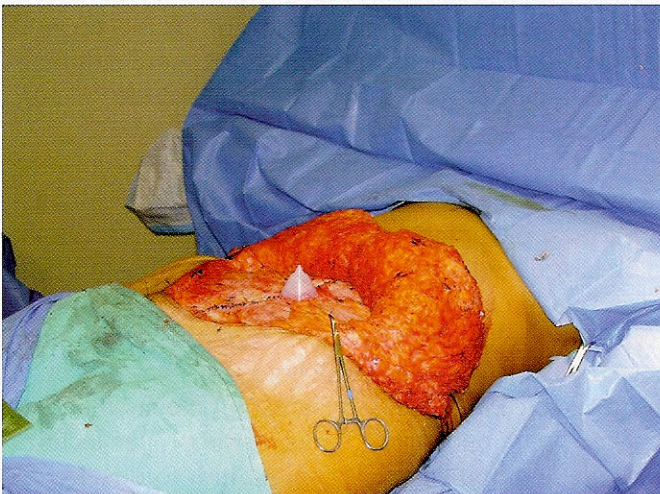
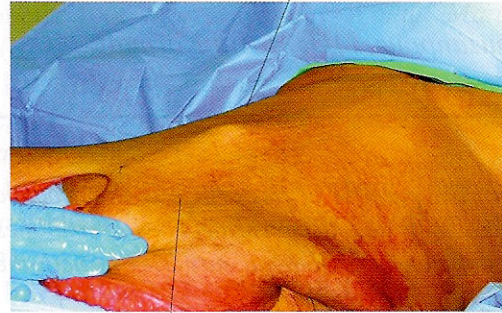


Figure 2. The Umbilical Locator is centered and anchored over the umbilicus prior to redraping the skin in order to locate the position of the umbilicus before the excess skin is excised.

U.L. placed under the skin on umbilicus



Abdominal wall skin

Figure 3. The surgeon is able to visualize and palpate the device after draping the anterior abdominal flap over it.

noplasties and is manufactured and marketed for sale by Innovative Med Inc (Irvine, California).

The midline of the abdomen is marked to assist in the location of the umbilicus. Once the skin flap has been completely mobilized (Figure 1), the Umbilical Locator is centered and anchored over the umbilicus (Figure 2). The Umbilical Locator is used after the plication steps are completed and it is placed on top of the umbilicus prior to redraping the skin in order to locate the position of the umbilicus before the excess skin is excised. It should be noted that the Umbilical Locator will have no effect on hernia formation or prevention.

Subsequently, the surgeon is able to visualize and palpate the device after draping the anterior abdominal flap (Figure 3). This serves to facilitate a more accurate umbilical transposition. The device can then be safely removed through the inferior incision (Figure 4).

Results

To date, the Umbilical Locator has been used exclusively by Dr. Forouzanpour, with excellent results. He has used this innovative device in 20 recent abdominoplasties, with no resultant umbilical slough or ischemia. Furthermore, there have been no complications noted with positioning, anchoring, or removal of the device.

Preliminary data provides promising evidence for the continued and future use of the Umbilical Locator as a

more reliable and accurate method of umbilical localization in abdominoplasty than prior techniques such as the use of a spinal needle to pinpoint the location of the umbilicus. The Umbilical Locator has the potential to decrease the incidence of deformities, wound tension, and hypertrophic scarring or ischemia of the skin flap.

Discussion

In abdominoplasty aesthetic and natural appearance of umbilicus is a key factor to the end result. In the 1950s, Vernon¹ introduced the preservation of the umbilicus in abdominoplasty, and since then numerous techniques for umbilical transposition have been launched. The definition of an aesthetic umbilicus has changed over the years. Craig's² definition of an aesthetic umbilicus is a small-sized umbilicus. Subsequently, superior hooding, which is considered to be an essential factor in creating a natural-appearing umbilicus, was introduced by Choudhary and Taams.³ In addition, other techniques such as periumbilical concavity and inconspicuous scar (known as scarless technique) were developed. To date, surgeons have used several different devices to aid in accurately locating the umbilicus in abdominoplasty. These include suturing a button to the umbilical stalk, spinal needle, a magnet sutured to the umbilical stalk and a locking device, which was introduced by McGhan Medical Corporation, now Allergan, Inc. (Irvine, Calif) and the 2-dermal-flap umbilical transposition, which has been known to create a natural and aesthetic umbilicus. What has been to date a technically imprecise, unsophisticated, but complicated phase in abdominoplasty can

now be simplified and refined using the Umbilical Locator.

The umbilical locator can be used with any surgical method to create the umbilicus. The purpose of the product is only to help locate the position of the umbilicus on the skin. The surgeon is allowed to use the incision or surgical method of his or her choice on top of the umbilicus after the skin has been redraped prior to excision to precisely relocate the umbilicus.

Conclusion

Choosing the correct location for umbilical transposition prevents torque and tension, thereby decreasing the risk of wide umbilical scars, deformities, or ischemia. Using the Umbilical Locator not only eliminates guessing, but transposition becomes more precise, resulting in a symmetric, natural, and aesthetically pleasing belly button for the patient.

References

1. Vernon S. Umbilical transplantation upward and abdominal contouring in lipectomy. *Am J Surg.* 1957; 94:490.
2. Craig SB, Faller MS, Puckett CL. In search of the ideal female umbilicus. *Plast Reconstr Surg.* 2000; 105:389.
3. Choudhary S, Taams O. Umbilicosculpture: a concept revisited. *Br J Plast Surg.* 1998;51:538.

Commentary:

In "The Umbilical Locator: Bringing simplicity to surgery"¹ Drs Forouzanour and Karamali launch a device which is to simplify umbilical transposition in abdominoplasty.

Definition of aesthetic abdominoplasty has always been related to the natural appearance of the umbilicus and its position. The historical background of dermo-lipectomy goes back to the last decade of the 19th Century when Marx and Demars described the resection of the abdominal flap.² In the 1950s, Vernon introduced the preservation of the umbilicus in abdominoplasty,³ and since then numerous techniques for umbilical transposition have been launched.

The aesthetic considerations for umbilicoplasty include: position, depth, shape and location of the scar. A small sized umbilicus has been defined by Craig as an aesthetic umbilicus.⁴ Subsequently Choudhary and Taams introduced superior hooding of the umbilicus, which is considered an essential factor in creating a natural appearing umbilicus. Choudhary and Taams



Figure 4. The device can then be safely removed through the inferior incision.

described the amount of hooding as a factor of age and mass above the umbilicus and that gravity is a major factor in this effect. They introduced their own technique for creating the hood.⁵ Other key factors in creating a natural umbilicus are to avoid a floating umbilicus by creating a periumbilical concavity and inconspicuous scar (known as scarless technique).

Various methods for placement of the umbilicus during abdominoplasty and reconstruction have been described. Discussions have focused on the vertical position of the transumbilical plane, relative to the xiphoid process and pubic tubercle, with the assumption that the umbilicus is a midline structure.⁶

In order to avoid malposition of umbilicus, surgeons have been using different devices to aid in accurately locating the umbilicus in abdominoplasty. These include suturing a button to the umbilical stalk, using a spinal needle, using a magnet sutured to the umbilical stalk, attaching a locking device (introduced by McGhan Medical Corporation), and the two dermal flap umbilical transposition which has been known to create a natural and aesthetic umbilicus.

In comparison to the previous devices, the umbilical locator developed by Dr Forouzanpour brings more simplicity to abdominal surgery, in both cosmetic and reconstructive fields.

The authors of "The Umbilical Locator: Bringing simplicity to surgery" Drs Forouzanpour and Karmali, have successfully launched a device that will simplify umbilical transposition in abdominoplasty which for long has been a challenge particularly for junior surgeons.

According to Drs Forouzanpour and Karmali the umbilical locator functions as a device for identifying the umbilical position which I completely agree with. However, my greatest disagreement with Drs Forouzanpour and Karmali is with regard to a statement they made in their article: "the umbilical locator has the potential to decrease the incidents of deformities, wound tension, and hypertrophic scarring or ischemia of the skin flap." In my opinion the umbilical locator acts only as a device to simplify umbilical transposition and is not going to decrease the risk for wound tension, hypertrophic scarring, and ischemia of the skin flap. In order to achieve an aesthetic and natural umbilicus,

a surgeon should follow the above mentioned techniques and not only rely on the umbilical locator device. I believe a combination of Dr Forouzanpour's umbilical locator and the above named surgical techniques can provide a satisfactory result in abdominoplasty.

References

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6. Rohrich RJ, Sorokin, ES. Is the umbilicus truly midline? Clinical and medicolegal implications. *Plast Reconstr Surg.* 2003;112:259.

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Response:

The statement made in Dr Rezai's commentary regarding the potential for decrease in deformity or wound tension, applies only to the cases that deformity and scars are formed as a result of improper or incorrect localization of the umbilicus which results in the umbilicus being forced through an opening at an angle. Once under tension, the deformity and shape can change which in turn can result in hypertrophic scarring or keloid formation. If the opening is selected properly above the umbilical stalk, the risk of deformities is reduced.

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